

Prevalence and Social Determinants of Tobacco Use among Health Professional Students in Southeast Asia

Manatee Jitanan ¹, Kwanjai Amnatsatsue ², Patcharaporn Kerdmongkol ²,
Farizah Binti Mohd Hairi ³, Pimpan Silapasuwarn ² and Nithat Sirichotiratana ²

¹ Faculty of Public Health and Faculty of Graduate Studies, Mahidol University

E-mail: manatee.jit@student.mahidol.ac.th

² Faculty of Public Health, Mahidol University

³ Faculty of Medicine, University of Malaya

ABSTRACT

Socioeconomic inequality and its impact on health is a global health concern. Tobacco use has been the single biggest cause of inequality in morbidity and mortality in South East Asia region (SEA). This mixed method research was conducted to examine tobacco use and its social determinants among health professional students in Thailand, Indonesia, and Malaysia. Multi-stage sampling was done to recruit subjects. After document analysis of international and national policy related to tobacco use, the Global Health Professional Students Survey questionnaire was modified and validated. After IRB approval, the 3rd-4th year health professional students from the selected universities joined an online survey. A total of 698 health professional students joined the survey with the response rate varied from 40% in Indonesia to 45% in Thailand. Then, in-depth interviews were conducted with an administrative representative assigned by the Dean of the selected universities. Thirty-three subjects (4.7%) reported using tobacco in the past 30 days. Public health students reported the highest prevalence of current tobacco use (5.8%), while medical students and nursing students reported 4.3% and 1.6 %. According to multiple logistic regression analysis, adjusted odds ratios for current tobacco use after controlling other cofactors, was significantly higher for females, ethnicity (Thai), and low self-efficacy. Multi-level interventions for tobacco use prevention and control ranged from educational programs to anti-tobacco student network. Key success factors for university implemented smoke-free campus policy were leadership and multi-partner collaboration. These findings demonstrate a minor impact of social determinants (gender and ethnicity) on current tobacco use. The findings of this current study can be used to advocate tobacco use control and prevention in order to strengthen smoke-free campus policy in SEA. However, the intervention should focus more on self-efficacy promotion among female health professional students to prevent tobacco use.

BACKGROUND

Although the overall prevalence of smoking in South East Asia region (SEA) tended to be decreased, youth smokers tended to be increasing as a result of shifts in marketing to target populations (U.S. Department of Health and Human Services, 2014). Health professional students were recognized as important human resources for tobacco control (WHO, 2005), but their tobacco use reported in the literature varied, with the highest prevalence found in public health students (8.2%) (Pitayarungsit, S., et al, 2018). However, there was a lack of evidence on social determinants as predictors of tobacco use among health professional students in SEA.

OBJECTIVE

The objective of this research was to examine prevalence of tobacco use and its social determinants among health professional students in South East Asia.

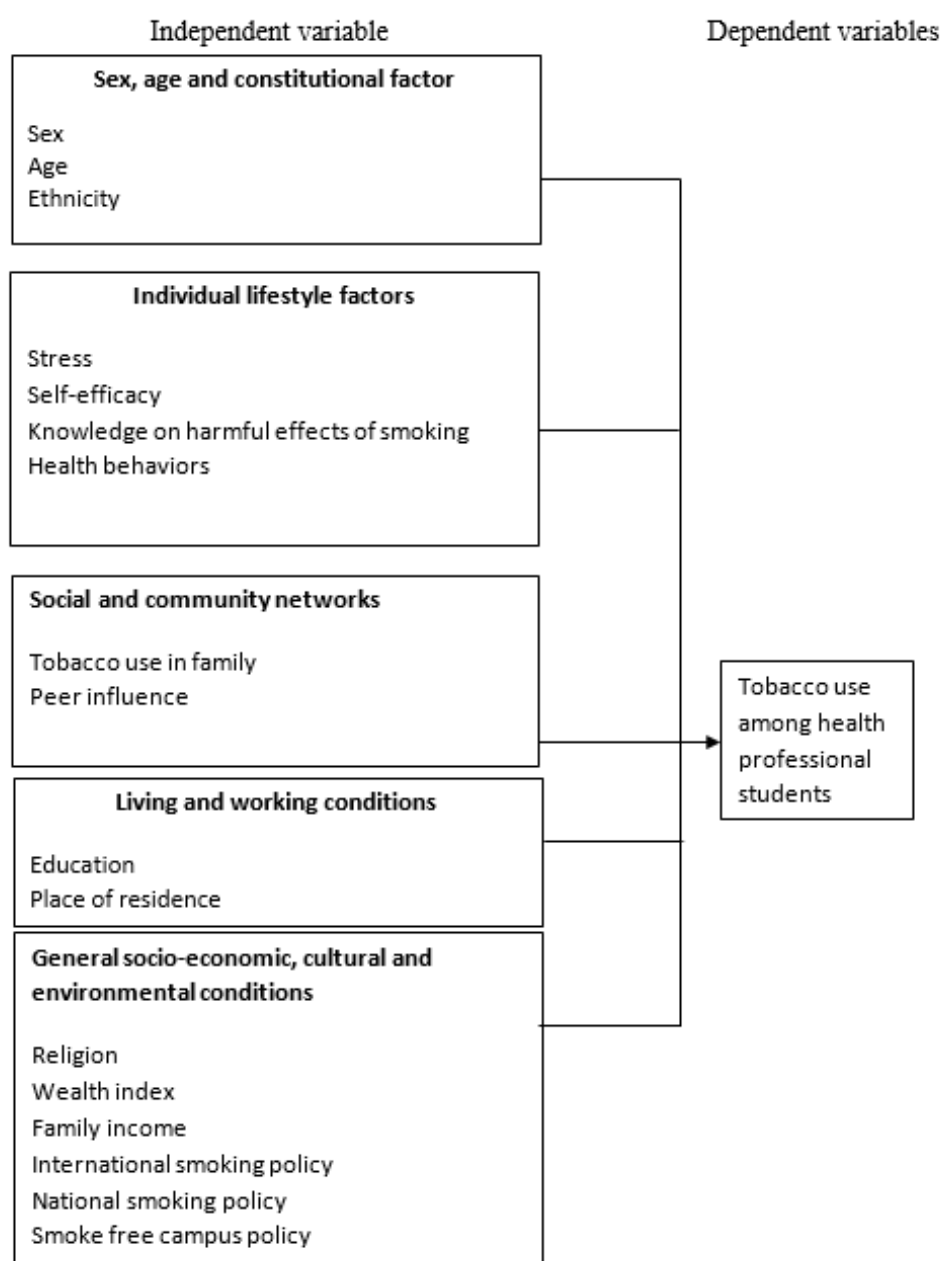


Figure 1: Conceptual Framework

METHODOLOGY

A conceptual framework (Figure 1) was applied using a social determinants of health model. Independent variables included demographic factors, individual lifestyle factors, social and community networks, living and working conditions, general socio-economic, cultural and environmental conditions. The dependent variable was tobacco use among health professional students.

For research methods, this study applied mixed method research design with three phases. Phase 1 began with Document analysis to prepare the scope/background for the study. Phase 2, after IRB approval, used an online survey conducted among 698 health professional students who enrolled in the third and fourth year of selected universities in Indonesia, Thailand and Malaysia. Phase 3, representatives who met the criteria and were assigned by their Dean were interviewed about tobacco use policy and interventions.

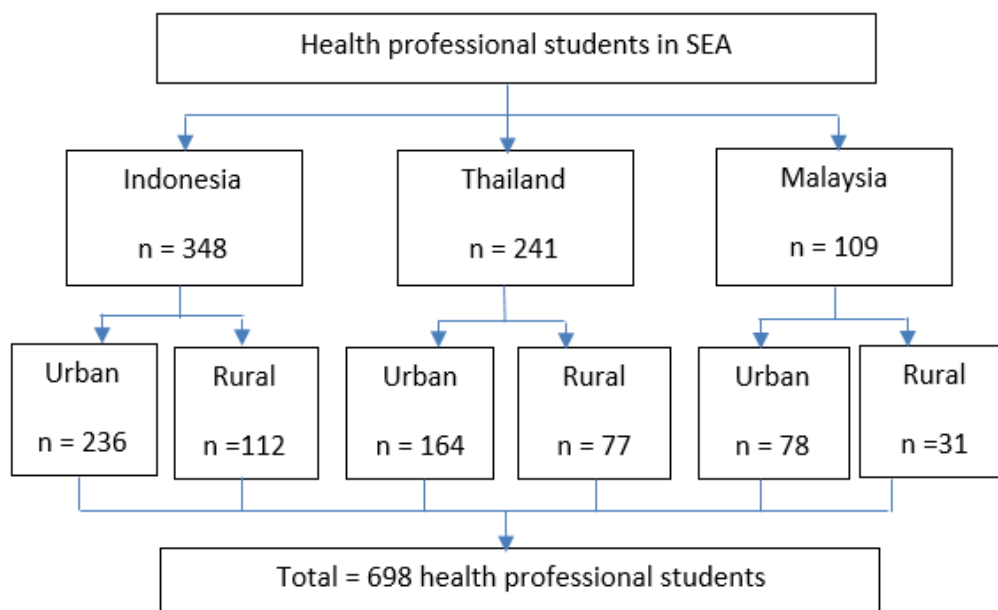


Figure 2: Multi-stage sampling

Multi-stage sampling was done to select universities following figure 2. First, three countries were selected according to prevalence of tobacco use and country income level. Second, six universities were selected from Asian University Network (AUN) with locations in rural and urban areas. Third, third and fourth year students enrolled in the 2017 Academic year who met the inclusion criteria were invited to participate in the online survey.

For research instrument, the online survey questionnaire was developed by modifying the Global Health Professional Students (GHPS) survey for quantitative data. It had eight parts which included general information, tobacco use among health professional students, stress, Health behaviors, self-efficacy, knowledge on harmful effects of smoking, peer influence, and perception of tobacco use prevention and control policy. In the qualitative part, guidelines for in-depth interviews included policy and strategies, interventions/program/project, successful factors, obstacles, and suggestions related to tobacco use and control. The validity of the research instrument was assessed by three experts with the acceptable Content Validity index (CVI) of 0.8.

Back translation was performed to confirm the similarity of the content between Indonesian, Thai, and Malaysian version. The acceptable Cronbach's alpha of 0.7-0.94 was obtained.

RESULTS

For the results, a total of 698 health professional students joined the survey with a response rate that varied from 40% in Indonesia to 45% in Thailand. Thirty-three subjects (4.7%) reported using tobacco in the past 30 days.

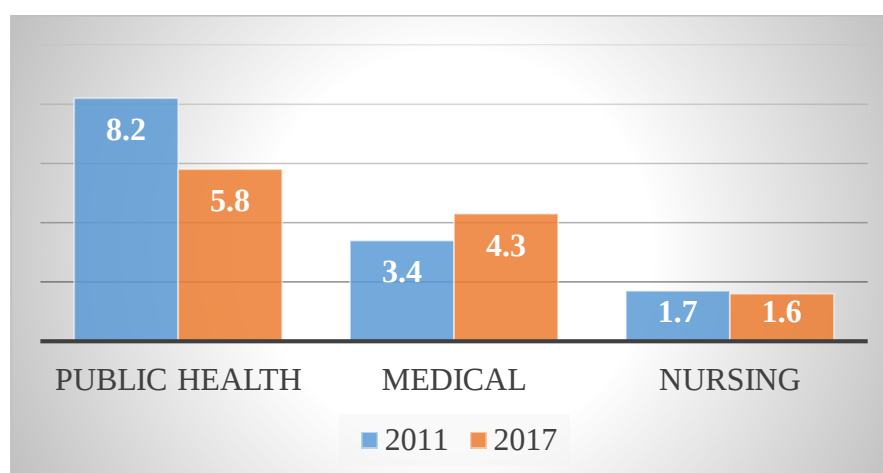


Figure 3: Prevalence of tobacco use in each study program comparing with the previous study in 2011

Public health students reported the highest prevalence of current tobacco use (5.8%) (Figure 3), while medical students and nursing students reported 4.3% and 1.6 % respectively. The trend of tobacco use in public health and nursing students seems to be decreasing. However, the trend of tobacco use in medical students has increased compared with the previous study in 2011 (Pitayarungsit, S., et al, 2018). However, the prevalence in Indonesia decreased from 49.6% reported in 2012 (Venkatesh S. and Sinha DN., 2012) to 2.9% from this study. Thailand had a nearly imperceptible change from 2011 with 8.2% (Pitayarungsit, S., et al, 2018) to 8.3%. Malaysia had decreasing trend from 3.3% in 2011 (Rashid AK1 and Azizah AM., 2011) to 2.8%.

Table 1: Characteristics of subjects classified by tobacco use (n=698).

Variables		Non-tobacco user (n=665)	Tobacco user (n=33)
Sex	Female	537 (80.8)	19 (57.6)
	Male	128 (19.2)	14 (42.4)
Age	19-21	474 (71.3)	23 (69.7)
	22-24	191 (28.7)	10 (30.3)
Education	Third	462 (69.5)	26 (78.8)
	Fourth	203 (30.5)	7 (21.2)
Religion	Islam	258 (38.8)	9 (27.3)

Table 1: Characteristics of subjects classified by tobacco use (n=698) (cont.)

Variables		Non-tobacco user (n=665)	Tobacco user (n=33)
Ethnicity	Buddhism	219 (32.9)	19 (57.6)
	Other	188 (28.3)	5 (15.1)
	Indonesia	338 (50.8)	10 (30.3)
	Thailand	221 (33.2)	20 (60.6)
	Malaysia	106 (16)	3 (9.1)
Stress -Level	Low	88 (13.2)	9 (27.3)
	Middle	522 (78.5)	2 (66.7)
	High	55 (8.3)	2 (6)
-From effort, reward, overcom mitment	Low	101 (15.2)	7 (21.2)
	Middle	430 (64.7)	20 (60.6)
	High	134 (20.1)	6 (18.2)
Health behaviors	Low	43 (6.5)	5 (15.2)
	Middle	562 (84.5)	23 (69.7)
	High	60 (9)	5 (15.1)
Self-efficacy	Low	141 (21.2)	11 (33.3)
	Middle	82 (12.3)	5 (15.2)
	High	442 (66.5)	17 (51.5)
Knowledge	Low	14 (2.1)	1 (3)
	Middle	237 (35.6)	15 (45.5)
	High	414 (62.3)	17 (51.5)
Place of residence	Urban	520 (78.2)	25 (75.8)
	Rural	145 (21.8)	8 (24.2)
Family income (USD)	0 to 500	255 (38.3)	7 (21.2)
	501 to 1000	214 (32.2)	7 (21.2)
	1000+	196 (29.5)	19 (57.6)
Tobacco use in family	Father	199 (29.9)	9 (27.3)
	Mom	4 (0.6)	0 (0)

Table 1: Characteristics of subjects classified by tobacco use (n=698) (cont.)

Variables		Non-tobacco user (n=665)	Tobacco user (n=33)
Peer influence	Sibling	111 (16.7)	5 (15.2)
	Low	103 (15.5)	4 (12.1)
	Middle	394 (59.2)	20 (60.6)
Perception of international smoking policy	High	168 (25.3)	9 (27.3)
	Low	150 (22.6)	6 (18.2)
	Middle	303 (45.6)	19 (57.6)
Perception of national smoking policy	High	212 (31.8)	8 (24.2)
	Low	158 (23.8)	8 (24.2)
	Middle	250 (37.6)	15 (45.5)
Perception of smoke free campus policy	High	257 (38.6)	10 (30.3)
	Low	143 (21.5)	5 (15.2)
	Middle	311 (46.8)	16 (48.5)
	High	210 (31.7)	12 (36.3)

From Table 1: it was found that most of the tobacco users were female, came from the aged group of 19 to 21. They were mostly third year students; most student tobacco users identified as Buddhist; they came from Thailand, and reported middle level of stress. Most of them reported health behaviors in middle level and high level for self-efficacy; had a high level of knowledge of the harmful effects of tobacco use, and had middle knowledge of national and international tobacco policies. A large majority (75%) of respondents lived in urban surroundings and came from high income families. There was little evidence of family involvement in tobacco use (i.e., only 27% had a father who used tobacco). In this regard, peers may have had greater influence as 60.6% noted middle level peer influence.

Table 2: Impacts of Social determinants on tobacco use.

		B	Std. Error	Wald	Df	Sig.	Exp(B)
Sex	Female	1.187	0.436	7.413	1	0.006	3.278
	Male (R)						
Ethnicity	Indonesia	-2.469	1.867	1.749	1	0.186	0.085
	Thailand	-4.613	2.253	4.193	1	0.041	0.010
	Malaysia (R)						
Self-efficacy	Low	-1.737	0.580	8.977	1	0.003	0.176
	Middle	-0.278	0.589	0.223	1	0.637	0.757
	High (R)						

Table 2 showed minor impacts of social determinants on tobacco use among health professional students in SEA countries. According to multiple logistic regression analysis, adjusted odds ratios for current tobacco use after controlling other cofactors, was significantly higher for females, ethnicity (Thai), and low self-efficacy.

Table 3: Policies and successful factors among selected countries.

	Indonesia		Thailand		Malaysia	
International policy	MPOWER		WHO FCTC/MPOWER (since 2005)		WHO FCTC/MPOWER (since 2005)	
National policy/	Health law, National Health Insurance		Tobacco Products Control Act 2017, Ministry of public health notice		Declaration of Non-Smoking Area 2015, Control of tobacco product regulations 2018	
Smoke free Campus	Yes		Yes		Yes	
Intervention	Student network, campaign a smoke free day	providing brochure about tobacco use	Ambassador of non-tobacco use curriculum/ quit line	Social media about tobacco issue	Promoted smoke free environment	Developed programs for educating the public
Successful factor	Support from high level person Collaboration with parents and staffs		leader ship, good network, Professional council / THPF Support from high level person		Collaboration/working with students IT and electronic media	

The WHO Framework Convention of Tobacco Control has been signed by Thailand and Malaysia but not by Indonesia (WHO, 2017). (Table 3) All three countries used national policy with health laws and tobacco control regulation. These countries had implemented MPOWER strategies and smoke free campus policy. Indonesia had implemented a student network campaign and smoke-free day with the successful factor of high level person supporter. Thailand promoted non-tobacco use in curriculum and leadership network as successful factor. Malaysia promoted smoke-free environment with IT support.

In conclusion, these findings demonstrate only impact of gender and ethnicity on current tobacco use among health professional students in SEA countries. Other socio-demographic factors, such as age, place of residence, education, wealth index, and knowledge on harmful effects of smoking were not significant. The findings of this current study can be used to advocate tobacco use control and prevention to strengthen smoke free campus policy in SEA. Further research will be needed to develop new strategies related to the gender and cultural context of the country. Multi-

universities network should be established to serve as a platform to develop new strategies to reduce and prevent tobacco use among students in SEA.

REFERENCES

- Beckfield, J., Olafsdottir, S. 2013. *Health Inequalities in Global Context*. Am Behav Sci. 2013; 57(8): 1014–1039.
- Pitayarungsit, S., Shotibenamaprn, P., Pankrajang, P. 2018. *Prevalence of tobacco use control of Thailand in 2559*. Tobacco control and diseases control organization. Ministry of health. Thailand.
- Rashid, AK1., Azizah, AM. 2011. *Smoking habits among medical students in a private university*. Malaysian Journal of Public Health Medicine.
- U.S. Department of Health and Human Services. 2014. *The Health Consequences of Smoking. 50 Years of Progress: A Report of the Surgeon General*. Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.
- Venkatesh, S., Sinha, DN. 2012. *Involvement of health professionals in tobacco control in the South-East Asia Region*. Indian J Cancer. Oct-Dec; 49(4):327-35.
- World Health Organization Tobacco Free Initiative. 2005. *The role of health professional in tobacco control*.
- World Health Organization, 2017. *WHO report on the global tobacco epidemic*. Country profile.